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Author(s)	Hung, IFN; Wong, DKH; Poon, RTP; Fong, DYT; Chui, AHW; Seto, WK; Fung, JYY; Chan, ACY; Yuen, JCH; Tiu, R; Choi, O; Lai, CL; Yuen, MF
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RISK FACTORS AND POST-RESECTION INDEPENDENT PREDICTIVE SCORE FOR THE RECURRENCE OF HEPATITIS B-RELATED HEPATOCELLULAR CARCINOMA

IFN Hung¹, DKH Wong^{1,2}, RTP Poon³, DYT Fong⁴, AHW Chui⁵, WK Seto¹, JYY Fung¹, ACY Chan³, JCH Yuen^{1,2}, R Tiu⁶, O Choi¹, CL Lai^{1,2}, MF Yuen^{1,2}

¹Department of Medicine, ²State Key Laboratory for Liver Research, ³Department of Surgery, ⁴School of Nursing Studies, The University of Hong Kong, Queen Mary Hospital, Hong Kong; ⁵Quality & Safety Division, New Territories West Cluster, Hospital Authority, Hong Kong; ⁶Department of Clinical Oncology, The University of Hong Kong, Queen Mary Hospital, Hong Kong

BACKGROUND: Independent risk factors associated with hepatitis B virus (HBV)-related hepatocellular carcinoma (HCC) after resection remains unknown. An accurate risk score for HCC recurrence is lacking.

METHODS: We prospectively followed up 200 patients who underwent liver resection for HBV-related HCC for at least 2 years. Demographic, biochemical, tumour, virological, and anti-viral treatment factors were analysed to identify independent risk factors associated with recurrence after resection and a risk score for HCC recurrence formulated.

RESULTS: Two hundred patients (80% male) who underwent liver resection for HBV-related HCC were recruited. One hundred patients developed HCC recurrence (median duration after resection, 52 weeks). Multivariate analysis identified that the presence of lymphovascular permeation ($P < 0.001$; relative risk [RR]=2.63), microsatellite lesions ($P < 0.001$; RR=2.56), preoperative HBV DNA of $>20\,000$ IU/mL ($P = 0.028$; RR=1.62) were independently associated with HCC recurrence. Antiviral treatment before ($P = 0.008$; RR=0.07) and after ($P = 0.004$; RR=0.55) resection was independently associated with lower risk of HCC recurrence. A post-resection independent predictive score (PRIPS) was derived and validated with sensitivity of 72.1% and 69.8% and specificity of 62.9% and 77%, to predict the 1- and 3-year risks for the HCC recurrence respectively with the hazard ratio of 2.71 ($P < 0.001$). The area under the curve for the 1- and 3-year prediction were 0.69 and 0.78, respectively.

CONCLUSIONS: Several tumour and virological factors were associated with a higher cumulative risk of HCC recurrence after resection. PRIPS was derived for more accurate risk assessment. Antiviral treatment reduced the risk of recurrence.